

# ***Blastobasis adustella* (Lepidoptera: Coleophoridae, Blastobasinae), new to the Belgian list**

Willy De Prins, Guido De Prins & Knud Larsen

**Abstract.** On 25 July 2008, a male specimen of *Blastobasis adustella* Walsingham, 1894 was caught in a light trap at Merksem (Province of Antwerpen, Belgium). This is the first records of this species from Belgium. Information on the geographical distribution and biology are presented and the species is compared to the three other Belgian Blastobasinae species.

**Samenvatting.** *Blastobasis adustella* (Lepidoptera: Coleophoridae, Blastobasinae), nieuwe soort voor de Belgische fauna

Op 25 juli 2008 werd een mannetje van *Blastobasis adustella* Walsingham, 1894 verzameld in een lichtval te Merksem (Prov. Antwerpen, België). Het is de eerste keer dat deze soort uit België wordt vermeld. Informatie over de geografische verspreiding en de biologie wordt gegeven en de soort wordt vergeleken met de drie andere Blastobasinae soorten die in België voorkomen.

**Résumé.** *Blastobasis adustella* (Lepidoptera: Coleophoridae, Blastobasinae), espèce nouvelle pour la faune belge

Le 25 juillet 2008, un exemplaire mâle de *Blastobasis adustella* Walsingham, 1894 fut trouvé dans un piège à Merksem (province d'Anvers, Belgique). Il s'agit de la première mention de cette espèce en Belgique. Des informations sur la distribution et la biologie sont données et l'espèce est comparée aux trois autres espèces qui figurent sur la liste des Blastobasinae de Belgique.

**Key words:** *Blastobasis adustella* – *Blastobasis lignea* – Faunistics – Belgium – First record.

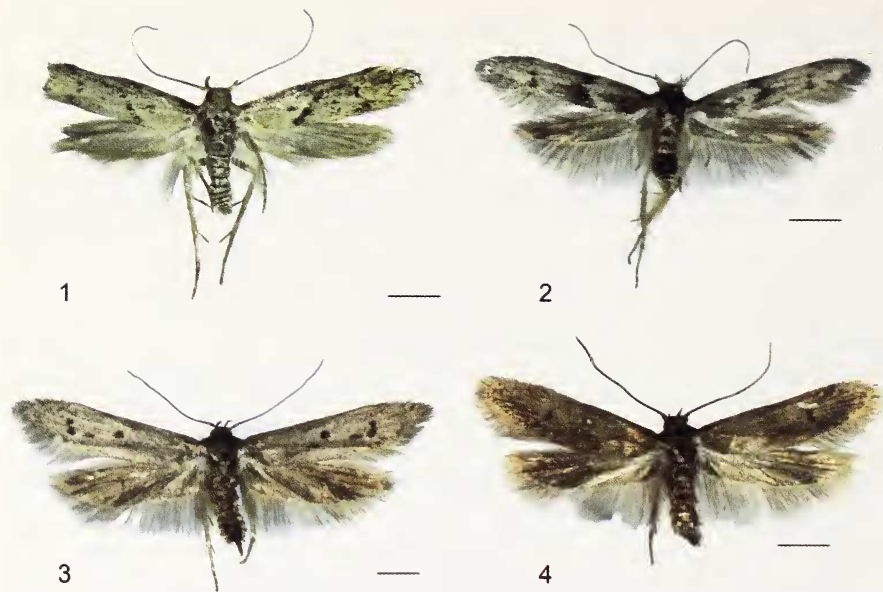
De Prins W.: Dorpsstraat 401B, B-3061 Leefdaal, Belgium. willy.deprins@gmail.com.

De Prins, G.: Markiezenhof 32, B-2070 Merksem, Belgium. guido.deprins@telenet.be.

Larsen, K.: Rontoftevej 33, DK-2870 Dyssegaard, Denmark. knudlarsen@dbmail.dk.

On 25 July 2008 a single, rather worn specimen of *Blastobasis adustella* Walsingham, 1894 was caught in a light trap in a suburban garden at Merksem (Prov. of Antwerpen, Belgium), leg. G. De Prins (fig. 1). This is the first record of this species for the Belgian fauna. The genus *Blastobasis* was hitherto represented in Belgium only by *Blastobasis phycidella* (Zeller, 1839) of which only a few records are known from the provinces of Antwerpen and West-Vlaanderen. This species was first recorded from Belgium already in 1864 from Ostend, 1 specimen on 20 July 1864, leg. E. Fologne (Fologne 1864). The first record from the Province of Antwerp dates from 05 June 2004, Merksem, leg. G. De Prins. The species is known from two other localities in the same province: Berchem and Mortsel, six specimens in June–early July, leg. G. De Prins, L. Janssen (De Prins & Steeman 2009). It is widespread in Europe (Sinev 2007) but almost nowhere taken in large numbers.

In Europe, 33 species of *Blastobasis* are known, most of which are endemic in Madeira (Karsholt & Sinev 2004, Sinev 2007a). Some of these species show an important individual variability which has invoked the description of several variations and individual forms, sometimes even species, leading to a complicated synonymy.



Figs. 1–4. Belgian species of Blastobasinae. 1.– *Blastobasis adustella* Walsingham, 1894, ♂, Belgium, Province of Antwerp, Merksem, 24 July 2008, leg. G. De Prins; 2.– *Blastobasis phycidella* (Zeller, 1839), ♀, Belgium, Province of Antwerp, Merksem, 08.vi.2004, leg. G. De Prins; 3.– *Hypatopa binotella* (Thunberg, 1794), ♀, Belgium, Province of Antwerp, Kalmthout, 29.vii.1984, leg. G. & W. De Prins; 4.– *Hypatopa inunctella* (Zeller, 1839), ♀, Belgium, Province of Antwerp, Kalmthout, 29.vii.1984, leg. G. & W. De Prins. Scale 2 mm.



Figs. 5–8. Abdomens of *Blastobasis* and *Hypatopa*, showing the rows of small spines on the tergites. 5.– *Blastobasis adustella*; 6.– *Blastobasis phycidella*; 7.– *Hypatopa binotella*; 8.– *Hypatopa inunctella*. Same faunistic data as the specimens in figs 1–4. Scale 2 mm.

This is the more apparent while in some important, and universally used textbooks (e.g. Dickson 2002), the wrong names have been applied to the species treated and figured. Almost all internet pages found with the keyword "Blastobasis lignea" in fact write about *B. adustella*. A complete treatment of all these names is given in the checklist by Karsholt & Sinev (2004). Because of the confusion in the synonymy, the same name has been applied to different species and vice versa.

## Geographical distribution

*B. adustella* has been described from Madeira (Walsingham 1894), from where it probably was introduced unintentionally to Ireland in the beginning of the 20<sup>th</sup> century (Poulton 1928, Bond *et al.* 2006). It occurs there mainly in coastal areas (Anonymous 2008). Later on, it turned up in Great Britain, adventitious either from Ireland or directly from Madeira (Mansbridge 1922, Meyrick, 1928). Unfortunately, the spread of this species in Great Britain has not been measured, but it is now well established in suburban gardens throughout the country, from Wales to Scotland, with a preference for coastal areas (Agassiz 1996, Bosanquet 2008). The first record from the European continent dates from 2002 when a specimen was found at Den Helder (province of Noord-Holland, The Netherlands) on 20 July 2001, leg. K. Kaag (Huisman *et al.* 2004). *B. adustella* is adventitious in Australia already from the beginning of the 20<sup>th</sup> century (Meyrick 1928). It is widespread and often common there, especially in Queensland and New South Wales (Herbison-Evans & Crossley). The species has furthermore doubtfully been recorded from the Azores (Sinev 2007).

## Biology

First instars of the phytophagous and saprophagous larvae mine the needles of *Picea* spp. and *Taxus baccata* (Mansbridge & Wright 1939, Hering 1957, Thomas & Polwart 2003). Later on they feed on a variety of food including mainly decaying vegetable matter (Meyrick 1928, Ellis 2007, Herbison-Evans & Crossley 2009, Kimber 2009). In Australia also on dry skins, bird droppings, the catkins of *Agathis robusta*, fruit of the palm tree and *Syzygium paniculatum* and dead leaves of *Eucalyptus* spp. are recorded as food for the larvae (Mansbridge & Wight 1939, Herbison-Evans & Crossley 2009).

The larva is whitish with a light brown head capsule. The larval stage lasts from April till June (Hering 1957).

The flight period extends from early July to mid October with a maximum in August. The moths come freely to light and are often found in light traps (Herbison-Evans & Crossley 2009, Kimber 2009).



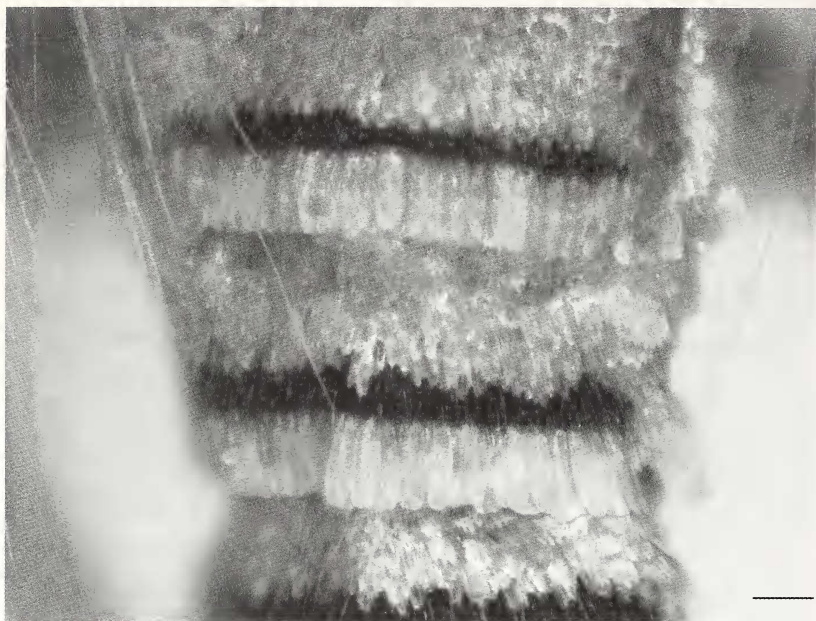


Fig. 9. Central tergites of the abdomen of *Blastobasis adustella* Walsingham, 1894, showing the row of small, black spines at the posterior margin of the central tergites. Scale 0.2 mm.



Fig. 10. Descaled abdomen of *Blastobasis adustella* Walsingham, 1894, showing the row of small, black spines at the posterior margin of the central tergites. Scale 0.1 mm.



Fig. 11. Male genitalia of *Blastobasis adustella* Walsingham, 1894, Belgium, Prov. of Antwerp, Merksem, 25 July 2008, leg. G. De Prins, Gen. prep. J. De Prins 3762. Scale 0.5 mm.

### General remarks on the Blastobasinae in Belgium

Formerly, the group was considered as a separate family, but some synapomorphies relate it to the Coleophoridae of which it is considered a subfamily in the Handbook of Zoology (Hodges 1999). There are four species in this subfamily occurring in Belgium:

***Blastobasis adustella* Walsingham, 1894**

- = *Blastobasis lignea* var. *melanella* Mansbridge & Wright, 1939
- = *Blastobasis lignea* var. *pallidella* Mansbridge & Wright, 1939
- = *Blastobasis xantographella* Rebel, 1940
- = *Blastobasis lignea* sensu auct.

***Blastobasis phycidella* (Zeller, 1839) [*Oecophora*]**

- = *Oecophora roscidella* Zeller, 1847

- Hypatopa binotella*** (Thunberg, 1794) [*Tinea*]  
 = *Tinea mouffetella* sensu Hübner, 1799, nec Linnaeus, 1761  
***Hypatopa inunctella*** (Zeller, 1839) [*Oecophora*]  
 = *Hypatima haliciella* Klemensiewicz, 1898  
 = *Hypatima fuscella* Klemensiewicz, 1898

*Blastobasis sarcophaga* Meyrick, 1902, formerly considered a synonym of *B. phycidella*, is now regarded as a synonym of *B. marmorella* (Wollaston, 1858), occurring in Madeira, France, and Spain (mainland and Canary Islands), and it was introduced to Australia (Karsholt & Sinev 2004).

*Blastobasis magna* Amsel, 1952, formerly considered a synonym of *B. phycidella*, is regarded as a separate species by Sinev (2007b) with its range extending throughout the western Mediterranean.

Blastobasinae are recognized most easily by the presence of a transverse row of small spines at the posterior margin of each tergite, a distinctive character of this subfamily (figs. 5–8). The genera and species have a wing pattern and coloration of various shades of brown and grey, mixed with whitish scales, but this pattern is not diagnostic because individual variation is rather important and it can overlap interspecifically (Adamski & Brown 1989). Therefore, reference has to be made to genital structures in many cases, especially in the case of worn specimens. The Belgian species, however, can be identified with external characters in most cases.

1. – Forewing ground colour ochreous to brownish..... ***H. inunctella***  
 – Forewing ground colour whitish, greyish to almost blackish..... **2**
2. – Forewing ground colour unicolorous grey, without fascia but with 3–5  
 black dots ..... ***H. binotella***  
 – Forewing ground colour not unicolorous, with a fascia before middle of  
 wing ..... **3**
3. – Fascia angulated, always reaching costa; base of forewing darkened  
 ..... ***B. phycidella***  
 – Fascia linear, mostly not reaching costa; base of forewing not darkened  
 ..... ***B. adustella***

All Belgian Blastobasinae species have rarely been recorded. This is perhaps due to the lack of interest of entomologists for these rather dull-colored specimens, but also in most of the neighbouring countries records of Blastobasinae seem to be rather scanty.

***Blastobasis phycidella*** has only been recorded from the coastal region (locality: Ostend) and from the provinces of Antwerp (localities: Berchem,

Merksem, Mortsel) and Limburg (Diepenbeek). Flight period from mid May till mid August. The larva lives among decaying vegetable matter, fallen leaves of e.g. *Quercus*, needles of pines trees, etc.

*Hypatopa binotella* occurs mainly on the sandy soils of the Kempen in the provinces of Antwerp and Limburg (localities: Kalmthout, Schoten, Turnhout, Kinrooi). There is one old record from the province of Oost-Vlaanderen (locality: Melle). Flight period from the end of May till mid August. The larva feeds on fallen needles of several species of pine trees.

*Hypatopa inunctella* has hitherto only been recorded from the provinces of Antwerp (localities: Antwerpen-Linkeroever, Kalmthout, Schoten) and Limburg (Kinrooi). Flight period from mid May till late August. *H. inunctella* is most often connected with warm swamps with old growing of *Alnus glutinosa*.

There are some Blastobasinae species which might be expected to arrive to Belgium as well, since they have been recorded from adjacent areas:

*Blastobasis lacticolella* Rebel, 1940: Madeira (originally endemic), introduced and established in the British Isles where it is now widespread in southern England and recorded from Scotland and Sweden.

*Blastobasis rebeli* Karsholt & Sinev, 2004: Madeira (originally endemic), very recently unintentionally imported to England and recorded there in 1998 and again in 2001. It is the species mentioned in Dickson (2002) as *Blastobasis* sp.

For identification of these species, please refer to Karsholt & Razowski (2004).

## Acknowledgments

We would like to thank Dr. Ole Karsholt (Copenhagen) and Dr. Sergey Sinev (St. Petersburg) for providing valuable literature and Jurate De Prins (Tervuren) for photographing the specimens, their abdomens and preparing the genitalia slide of *Blastobasis adustella*.

## References

- Adamski, D. & Brown, R. L. 1989. Morphology and systematics of North American Blastobasidae (Lepidoptera: Gelechioidea). — *Mississippi Agricultural and Forestry Experiment Station Technical Bulletin* **165**: 1–70.
- Agassiz, D. J. L. 1996. Invasions of Lepidoptera into the British Isles. – In: Emmet, A. M. (Ed.) *The moths and butterflies of Great Britain and Ireland*. Vol. 3. Yponomeutidae–Elachistidae. — Harley Books, Great Horkeley, pp. 1–452 [Chapter pagination: 9–36].
- Anonymous. 2008. *Moths of Ireland micro moth species list*. — [www.mothsireland.com/micromoth.htm](http://www.mothsireland.com/micromoth.htm).
- Bond, K. G. M., Nash, R. & O'Connor, J. P. 2006. An Annotated Checklist of the Irish Butterflies and Moths (Lepidoptera). — The Irish Biogeographical Society and the National Museum of Ireland, Dublin [www.habitas.org.uk/InvertebrateIreland/species.asp?item=8176](http://www.habitas.org.uk/InvertebrateIreland/species.asp?item=8176).
- Bosanquet, S. D. S. 2008. Identifying micro moths in Gwent. — *Newsletter of the Monmouthshire Moth & Butterfly Group* **53**: 1–5.

- De Prins, W. 1998. Catalogue of the Lepidoptera of Belgium. — *Studiedocumenten van het Koninklijk Belgisch Instituut voor Natuurwetenschappen* **92**: 1–236.
- De Prins, W. & Steeman, C. 2009. *Catalogue of the Lepidoptera of Belgium*. — [www.phegea.org](http://www.phegea.org).
- Dickson, R. J. 2002. Blastobasidae. — In: Emmet, A. M. & Langmaid, J. R. (Eds.) *The moths and butterflies of Great Britain and Ireland*. Vol. 4, part 1. Oecophoridae–Scythrididae (excluding Gelechioidea). — Harley Books, Great Horkesley, pp. 1–326 [Chapter pagination: 196–203].
- Ellis, W. 2007. *Nederlandse bladmineerders*. — [www.bladmineerders.nl/minersf/lepidopteramin/blastobasis/vittata.htm](http://www.bladmineerders.nl/minersf/lepidopteramin/blastobasis/vittata.htm).
- Fologne, E. 1864. Lépidoptères nouveaux pour la faune belge. — *Annales de la Société entomologique de Belgique* **8**: 273–276.
- Herbison-Evans, D. & Crossley, S. 2009. *Caterpillars of Australia*. — [linus.socs.uts.edu.au/~don/larvae/blastobasis/ligneae.html](http://linus.socs.uts.edu.au/~don/larvae/blastobasis/ligneae.html).
- Hering, E. M. 1957. *Bestimmungstabellen der Blattminen von Europa: einschliesslich des Mittelmeerbeckens und der Kanarischen Inseln*. — Junk, 's Gravenhage, vols. **1**, **2**: 1–1185; vol. **3**: 1–221.
- Hodges, R. W. 1999. The Gelechioidea. — In Kristensen, N. P. (Ed.). *Handbook of Zoology IV. Arthropoda: Insecta. Part 35 Lepidoptera, Moths and Butterflies. Volume 1: Evolution, Systematics, and Biogeography*. — Walter de Gruyter, Berlin, New York, x + 491. [Chapter pagination: 131–158].
- Huisman, K. J., Koster, J. C., van Nieukerken, E. J. & Ulenberg, S. A. 2004. Microlepidoptera in The Netherlands in 2001–2002. — *Entomologische Berichten, Amsterdam* **64**(6): 170–187.
- Karsholt, O. & Sinev, S. Y. 2004. Contribution to the Lepidoptera fauna of the Madeira Islands. Part 4. Blastobasidae. — *Beiträge zur Entomologie* **54**(2): 387–463.
- Kimber, I. 2009. *UKMoths, Guide to the Moths of the British Isles*. — [ukmoths.org.uk/](http://ukmoths.org.uk/).
- Mansbridge, W. 1922. *Blastobasis lignea* Wlsm. (Lep.): a species new to Britain. — *Entomologist* **55**: 145–147.
- Mansbridge, W. & Wright, A. E. 1939. The life history of *Blastobasis lignea* Wals. — *Entomologist* **72**: 27–30.
- Meyrick, E. 1928. *A revised handbook of British Lepidoptera*. — Briddles Ltd., Printers, Guildford. vi + 914 pp.
- Poulton, E. B. 1928. The Madeiran moth *Blastobasis lignea*, Wlsm. (Tineina), taken in N.E. Ireland in 1902. — *Proceedings of the entomological Society of London* **3**: 32–33.
- Sinev, S. Y. 2007a. Fauna Europaea. Family Blastobasidae. — In: Karsholt, O. & van Nieukerken, E. J. (eds.) *Fauna Europaea. Lepidoptera, Moths*, Version 1.3. — [www.faunaeur.org](http://www.faunaeur.org).
- Sinev, S. Y. 2007b. New and little known species of gray moths (Lepidoptera, Gelechioidea, Blastobasidae) from Eurasia. — *Entomologicheskoe Obozrenie* **86**(4): 883–894. (English translation: *Entomological Review* **87**(8): 1064–1073).
- Thomas, P. A. & Polwart, A. 2003. *Taxus baccata* L. — *Journal of Ecology* **91**: 489–524.
- Walsingham, de Grey Th. 1894. Catalogue of the Pterophoridae, Tortricidae, and Tineidae of the Madeira Islands, with notes on and descriptions of new species. — *Transactions of the entomological Society of London* **1894**: 535–555.